

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-3. (cancelled)

4. (currently amended) A method of manufacturing a semiconductor integrated circuit device having a capacitor element, comprising the steps of:

forming a cylindrical crown structure composed of a first conducting material on a first insulating film formed on a substrate of the semiconductor device so as to seal an end of said cylindrical crown structure being in contact with said first insulating film;

depositing a second conducting material, which is more difficult to ~~be oxidized as compared with~~ oxidize than said first conducting material, on ~~an entire surface including~~ at least part of the first insulating film adjacent to a base of said cylindrical crown structure, a bottom of an opening of said cylindrical crown structure, and a side wall of said cylindrical crown structure;

removing said second conducting material deposited on a ~~surface of~~ said first insulating film;

forming an accumulation electrode of said capacitor element, which is obtained by covering said first conducting

material with said second conducting material, by growing a film of said second conducting material deposited on the bottom of the opening of said cylindrical crown structure and the side wall of said cylindrical crown structure while using said second conducting material as a seed layer after having removed said conducting material from said first insulating film;

thereafter forming a second insulating film, acting as a dielectric insulating film of said capacitor element, on an exposed surface of said accumulation electrode; and

introducing oxygen into an oxygen defect of said second insulating film.

5. (currently amended) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein a film thickness of said second conducting material used as said seed layer and deposited on a head top portion of said cylindrical crown structure is set, in the step of depositing said second conducting material, to be larger than that of said second conducting material used as said seed layer and deposited on the surface of said first insulating film.

6. (original) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein said second conducting material used as said seed layer is deposited, in the step of depositing said second conducting material, by using a sputtering method.

7. (currently amended) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein said second conducting material deposited on the surface of said first insulating film is removed by ~~[[an]]~~ anisotropic dry etching in the step of removing said second conducting material.

8. (currently amended) The method of manufacturing a semiconductor integrated circuit device according to claim 7, wherein a ratio of a depth of the opening of said cylindrical crown structure to a diameter of the opening is set to a value at which said second conducting material deposited on the surface of said first insulating film is removed by said anisotropic dry etching and at which said second conducting material deposited on the bottom of the opening remains regardless of said anisotropic dry etching.

9. (original) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein a CVD method is used for the growth of the film of said second conducting material in the step of forming the accumulation electrode.

10. (currently amended) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein said first conducting material has a mechanical strength greater than that of said second conducting material.

11. (original) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein said second conducting material is ruthenium.

12. (original) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein said first conducting material includes metals.

13. (original) The method of manufacturing a semiconductor integrated circuit device according to claim 12, wherein said first conducting material is titanium nitride.

14. (original) The method of manufacturing a semiconductor integrated circuit device according to claim 4, wherein said second insulating film is tantalum oxide.

15. (new) A method of manufacturing a semiconductor integrated circuit device having plural capacitor elements, the method comprising the steps of:

forming plural cylindrical crown structures of a first conducting material in a first insulating film on a substrate of the device, parts of the first insulating film being between bases of each of said plural cylindrical crown structures;

depositing a second conducting material on interior and exterior walls and an interior bottom of each of said cylindrical crown structures and on the first insulating material between said plural cylindrical crown structures, said second conducting material being more difficult to oxidize than said first conducting material, said second conducting material being

thicker at tops of said cylindrical crown structures than at the interior bottoms thereof;

removing said second conducting material from said first insulating material between said plural cylindrical crown structures and in a same step decreasing a thickness of said second conducting material at the tops of said cylindrical crown structures while retaining at least part of said second conducting material at the tops, on the interior and exterior walls, and on the interior bottom of each of said cylindrical crown structures;

following the removing step, growing a film of said second conducting material on the tops, interior and exterior walls and interior bottom of each of said cylindrical crown structures using the previously deposited said second conducting material as a seed for said film;

applying a second insulating film on the film of said second conducting material on the tops, the interior and exterior walls and the interior bottom of each of said cylindrical crown structures and on the first insulating material between said plural cylindrical crown structures; and

introducing oxygen into said second insulating film.